US DEPARTMENT OF AGRICULTURE
FOREST SERVICE

5240

Northeastern Area
State & Private Forestry
DIVISION OF FOREST PEST CONTROL

Report No. S-69 -19 September 1969

SARATOGA SPITTLEBUG CONTROL WITH MALATHION LV ON CHEQUAMEGON N.F.

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INTRODUCTION

A Saratoga spittlebug, Aphrophora saratogensis (Fitch), outbreak on plantation red pine was found in the fall of 1968 on the Washburn Ranger District (Millers, 1968). Nymphal survey in the spring confirmed the presence of high populations and located the outbreak in 5 plantations - 527 acres (Millers, 1969). A control project was developed by the Forest to spray the area with Malathion LV (95% tech) at the rate of 10 fl. oz. per acre.1/ The insecticide was applied on August 1, 1969.

METHODS

The effectiveness of the control was determined by the comparison of spittlebug populations before and after spraying (Abbott, 1925). Briefly, the calculations are as follows:

$$\frac{A - B}{A} \times 100 = \% \text{ control}$$

where, A = number of spittlebugs before spraying, and
B = number of spittlebugs after spraying.

The spittlebug populations were determined by sweeping and counting the number of adults on a predetermined number of red pines. 2/ About 40 trees were swept before spraying, and double that number afterwards. In calculations, the prespray number of adults was doubled to adjust for the smaller sample. Lines of survey were diagonally across the plantation to cover several flight paths of the spray plane. Prespray survey was made 3 days before and post-spray survey 4 days after spraying.

1/ The actual material applied was CYTHION (Pat. Reg. by Amer. Cyanamid Co.) It is an improved, primarily deodorized, malathion LV (95%)

2/ Field work done by Washburn R.D. personnel.

RESULTS

Good spittlebug control was achieved in all red pine plantations treated with malathion (See table I). The average control was 98.2%, with a range of 96% to 100%.

Table I. Evaluation of Saratoga spittlebug control with malathion LV.

PLANT NO.	T	R	S	ACRES	NO. OF SPITTLEBUGS BEFORE (A)	NO. OF SPITTLEBUGS AFTER (B)	CONTROL %
94	44	8	16/21	90	52	2	96
98	44	8	16	92	68	2	97
91/88	44	8	17/20	189	78	1	99
117	46	8	30	99	26	0	100
110	45	8	16	57	52	0	100
				527	276	5	AVE 98.2

REFERENCES

ABBOTT,W.S. 1925. A method of computing effectiveness of an insecticide. Journ. Econ. Entom. 18: 256-257

MILLERS, I. 1968 Biological evaluation of Saratoga spittlebug as based on 1968 scar count surveys on National Forests in the Lake States. USDA Forest Service, Northeast Area State and Private Forestry, St. Paul Field Office Rpt. S-68-13, 18 pp.

MILLERS, I. 1969. Results of Saratoga spittlebug nymphal survey on the Chequamegon N.F. USDA Forest Service, Northeast Area State and Private Forestry, St. Paul Field Office Rpt. S-69-3, 2 pp.